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IS 4205 (1989): Drafting stools-Specification [CED 35: Furniture]

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IS 4205 : 1989
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Indian Standard

DRAFTING STOOLS — SPECIFICATION

(Second Revision)

भारतीय मानक

आरेखन स्टूलों की विशिष्टि

(दूसरा पुनरीक्षण)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

March 1990

Price Group 2

Furniture Sectional Committee, CED 35

FOREWORD

This Indian Standard (Second Revision) was adopted by the Bureau of Indian Standards on 22 August 1989, after the draft finalized by the Furniture Sectional Committee had been approved by the Civil Engineering Division Council.

This standard was first published in 1967 and revised in 1975. In this revision the design of stool is improved so as the movements of a person are natural while working. Methods of test for strength and stability of stools have been included.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values (*revised*)'. The number of significant places retained in the rounded off value should be the same as that the specified value in this standard.

Indian Standard
DRAFTING STOOLS — SPECIFICATION
(Second Revision)

1 SCOPE

1.1 This standard lays down the requirements for materials, sizes, construction, finish and test of stools/chairs for use with drafting tables and reference tables.

2 REFERENCES

2.1 The Indian Standards listed in Annex A are necessary adjuncts to this standard.

3 MATERIALS

3.1 Aluminium Sheets

Aluminium sheets shall conform to alloy Designation NS3, NS4, 31500 to 40800 in H2 condition of IS 737 : 1986.

3.2 Aluminium Tubes

Aluminium tubes shall conform to Designation 62400, 63400 or 65032 of IS 1285 : 1975. Aluminium tubes with the following properties may also be used;

Tensile strength (*Min*)	26 kgf/mm^2
Elongation (*Min*) on 50 mm gauge length	16 percent

3.3 Electrodes

Electrodes for gas, arc and spot welding shall conform to IS 1278 : 1972, IS 814 (Part 2) : 1974 and IS 4972 : 1968 respectively.

3.4 French Polish

French Polish shall conform to IS 348 : 1968.

3.5 Mild Steel Sheets

Mild steel sheets shall conform to IS 513 : 1986 or IS 1079 : 1988.

3.6 Mild Steel Tubes

Mild steel tubes shall conform to IS 7138 : 1973.

3.7 Screws

Screws shall conform to IS 1365 : 1978.

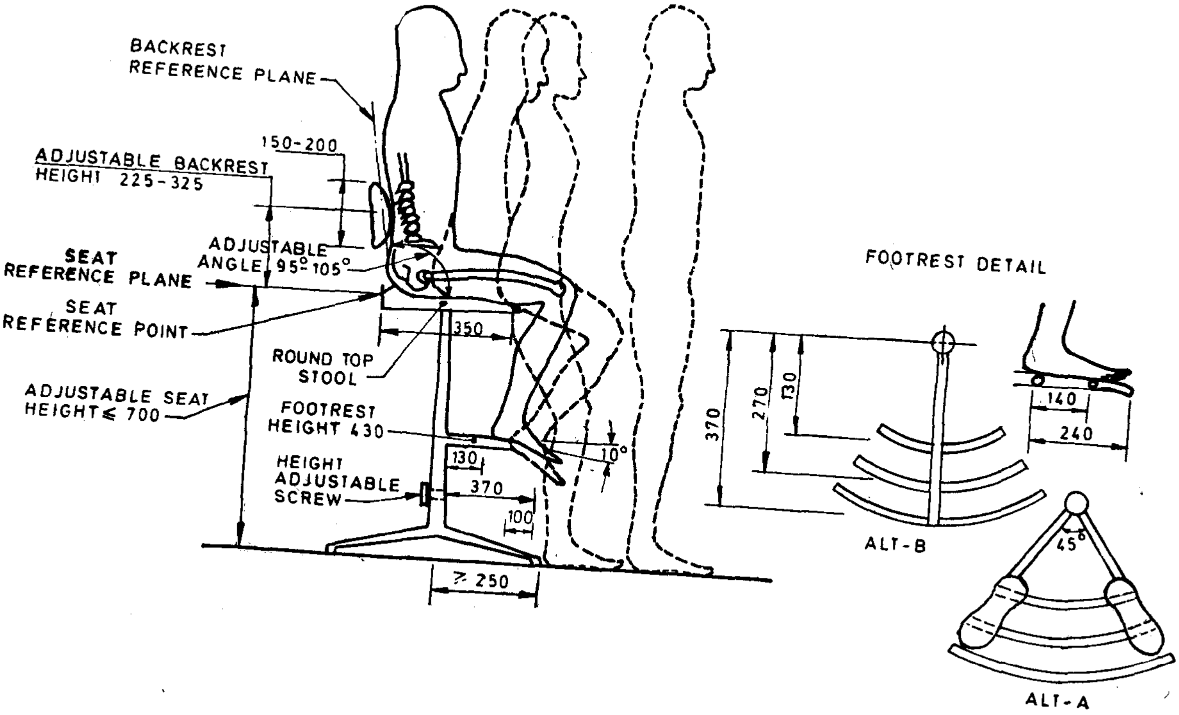
3.8 Wood

The wood suitable for furniture as specified in IS 399 : 1963 shall be used.

4 DIMENSIONS AND TOLERANCES

4.1 Dimensions

The overall dimensions of stools shall be as follows (*see* Fig. 1) :



All dimensions in millimetres.

FIG. 1 TYPICAL ADJUSTABLE STOOL FOR DRAFTING PURPOSE

a) Adjustable height	700 mm
b) Seat top diameter	350 mm
c) Height between footrest and seat	430 mm
d) Height between centre line of adjustable backrest and seat top	225 to 325 mm
e) Height of backrest	150 to 200 mm
f) Angle between centreline of backrest and seat	95° to 105°
g) Length of footrest	370 mm

4.2 Tolerances

The overall dimensions specified in **4.1** shall not vary by more than ±5 mm.

5 FABRICATION

5.0 Metals stools shall be assembled from the components given in **5.1** and **5.2**.

5.1 Legs

Leg shall be made either from mild steel tubular pipe with a wall thickness of not less than 1·25 mm and outside diameter 50 mm, or from aluminium tubular pipe with a wall thickness of not less than 2·0 mm and outside diameter 50 mm.

5.1.1 *Ends of Legs*

The bottom end of stool legs shall be provided with caps made of plastic, rubber or other resilient material which will not effect floor finish and are resistant to sliding. Ends of tubes shall be so fabricated that cutting or shearing during usage of the stool will be held to minimum.

5.1.2 *Foot Rest*

Foot rest shall be of metal tubular pipe with a wall thickness of not less than 1·6 mm and outside diameter 25 mm. Foot rest shall be fixed to the legs at a distance of 430 mm from the seat surface.

5.2 Seat

Seat surface shall be horizontal and may be cushioned, caned, moulded out of plastic or made out of wood or similar suitable material.

6 ASSEMBLY

6.1 The various components shall be assembled by means of welding.

6.1.1 The method of gas, arc and spot welding shall conform to IS 1323 : 1982, IS 816 : 1969 and IS 819 : 1957 respectively.

6.1.2 Aluminium parts shall be welded in accordance with IS 2812 : 1964.

7 FINISH

7.1 Metal Components

7.1.1 All dents, burrs and sharp edges shall be removed from the components and they shall be pickled, scrubbed and rinsed to remove grease, rust, scale or any other foreign element.

7.1.2 After pickling, all the mild steel parts shall be given phosphating treatment in accordance with IS 3618 : 1966 followed by a coat of suitable primer, such as red oxide.

NOTE — Putty shall be applied to all the surfaces requiring filling and shall conform to IS 110 : 1988.

7.1.3 Two coats of enamel paint shall then be applied as follows:

a) Under coat.

b) Finish coat with synthetic stoving enamel conforming to IS 151 : 1985, IS 2932 : 1974, or IS 2933 : 1975.

c) The components shall thereafter be baked at a specified temperature in an oven heated uniformly. The finish shall be smooth and uniform with a hard and tough film of enamel strongly adhering to the surface. The finish shall be free from all visible defects and shall not chip when tapped lightly with a dull pointed instrument.

7.1.4 Aluminium parts may be anodized, if required by the purchaser and shall conform to Grade AC 25 of IS 1868 : 1982.

8 PACKING

8.1 All the component parts shall be packed in such a way that no damage is caused to them during transit.

9 INFORMATION TO BE SUPPLIED BY THE PURCHASER

9.1 The purchaser shall supply the following information to the supplier along with the order :

a) Colour and finish; and

b) Where alternative methods of construction and finish are specified they shall be clearly stated in the order.

10 TESTING

10.1 Strength Requirements

The stools shall be tested for static strength, fatigue strength in accordance with IS 5416 (Part 1) : 1988 for test level 4 given in Table 2 of IS 5416 (Part 1) : 1988. The stools shall be considered to have passed the tests specified in Table 2 of IS 5416 (Part 1) : 1988 if no defects are observed.

10.2 Stability Requirements

The stools shall be tested to check the ability to withstand overturning in the most adverse combination in accordance with tests specified in IS 5416 (Part 2) : 1988. The stools shall be considered to have passed the tests if it did not overturn during tests.

11 MARKING

11.1 All stools shall be marked with a suitable mark indentifying the manufacturer.

ANNEX A

(*Clause* 2.1)

LIST OF REFERRED INDIAN STANDARDS

IS No.	*Title*
IS 110 : 1983	Ready mixed paint, brushing, grey filler, for enamels, for use over primers (*second revision*)
IS 151 : 1985	Ready mixed paint, spraying, finishing, stoving enamel, for general purposes, colour as required (*first revision*)
IS 348 : 1968	French polish (*first revision*)
IS 399 : 1963	Classification of commercial timbers and their zonal distribution (*revised*)
IS 513 : 1986	Cold rolled low carbon steel sheets and strips (*third revision*)
IS 737 : 1986	Wrought aluminium and aluminium alloy sheet and strip for general engineering purposes (*second revision*)
IS 814 (Part 2) : 1974	Covered electrodes for metal arc welding of structural steel : Part 2 For welding sheets (*fourth revision*)
IS 816 : 1969	Code of practice for use of metal arc welding for general construction in mild steel (*first revision*)
IS 819 : 1957	Code of practice for resistance spot welding for light assemblies in mild steel
IS 1079 : 1988	Hot rolled carbon steel sheets and strips (*fourth revision*)
IS 1278 : 1972	Filler rods and wires for gas welding (*second revision*)
IS 1285 : 1975	Wrought aluminium and aluminium alloy, extruded round tube and hollow sections (for general engineering purpuposes (*second revision*)
IS 1323 : 1982	Code of practice for oxy-acetylene welding for structural work in mild steel (*second revision*)
IS 1365 : 1978	Slotted countersunk head screws (dia range 1·6 to 20 mm) (*third revision*)
IS 1868 : 1982	Anodic coatings on aluminium and its alloy (*second revision*)
IS 2812 : 1964	Recommendations for manual tungsten inert-gas arc-welding of aluminium and aluminium alloys
IS 2932 : 1974	Enamel, synthetic, exterior (a) undercoating, (b) finishing (*first revision*)
IS 2933 : 1975	Enamel, exterior (a) undercoating, (b) finishing (*first revision*)
IS 3618 : 1966	Phosphate treament of iron and steel for protection against corrosion
IS 4972 : 1968	Resistance spot-welding electrodes
IS 5416 : 1988	Methods of test for strength and stability of chairs and stools (*first revision*)
(Part 1) : 1988	Strength
(Part 2) : 1988	Stability
IS 7138 : 1973	Steel tubes for furniture purposes

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